

EFFECTS OF COMMUNICATION, SOCIALIZATION AND COLLABORATION ON ONLINE LEARNING

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Abstract

Communication is the main instrument of learning. In the online university learning environment there are various communication tools, however, their effective use is limited by a number of factors. One of the main obstacles to open and productive communication is difficulty in establishing relationships among students and between students and their instructor. Success of the students' learning, however, depends to a great extent on the instructor's preparedness to engage them. This presentation offers a theoretical discussion integrating current research on the topic and practical recommendations for online educators.

Keywords: Communication, collaboration, interaction, relationship, socialization, online learning

Introduction

Online learning is, by definition, a form of independent learning (Moore, Kearsley, 2011; Haythornthwaite, Andrews, 2011. Harasim, 2012). To be successful, however, learning cannot be solely an internal, individual activity. It takes place through interaction with the environment, particularly with people and information. Research indicates that effective online learning can be promoted by communication and collaboration among students as well as with instructors (An, Kim, & Kim, 2008; Siemens, 2005; Rourke, Anderson, Garrison & Archer, 2001). While educators should stimulate learner autonomy, complete individualization and independence of learning in the organized online university environment, however, may affect the learning process and outcomes that thrive on open communication and strong relationships, especially in view of the social constructivist theory which advocates collaboration and cooperation. Online learning, though highly individualized, thus needs to take place in virtual learning communities, even more than in onsite classrooms.

Online learning can be built on a highly interactive model, one that promotes social presence, active communication and collaboration, helps establish relationships among all stakeholders, and encourages the creation of a learning community. Application of such an approach, for instance, as a Community of Inquiry or CoI (Akoyol & Garrison, 2011) may lead to higher levels of learning and satisfaction in an online course with a focus on community building. Palloff and Pratt (2005) indicate that by creating and sustaining a community for learning, overall student satisfaction (and possibly, quality of the learning outcomes) increases when the community is engaged. Learning Management Systems (LMS), such as Blackboard, eCollege, and Desire2Learn - three of the most widely utilized systems (Green, 2013), as well as some others, like Moodle and MOOC's, thus far have limited capacity for interaction among the participants of organized learning. Therefore the responsibility to create an effective interactive environment rests mainly with the instructor.

Communication is key to effective learning as it plays a crucial role by helping develop cognitive skills, construct and transfer knowledge, socialize and establish a learning community. It also enables the sharing of information, thoughts and ideas, which contribute to learning. Information transforms into knowledge through communication. Scardemalia and Beriter (2002) assert that “knowledge is socially constructed, and best supported through collaborations designed so that participants share knowledge and tackle projects that incorporate features of adult teamwork, real-world content, and use of varied information sources”(p. ?). As knowledge is being constructed in communication, so the sense of learning is being created via communication, like the “meaning is a phenomenon of thought only in so far as thought is embodied in speech” (Vygotsky 1962, 153). Discourse, from a constructivist perspective, is a central mechanism for learning (Palincsar, 1998). Communication actually creates opportunities for learning to take place. Moreover, it also helps to instill and maintain enthusiasm in learners, increase motivation, and build positive relationships among learners and with the instructor. So, direct personal communication among students and between students and their teacher is an indispensable component of any learning.

In an online environment where students can no longer personally experience and acquire knowledge, they need to construct their own knowledge by communicating with other students and instructors and establishing whatever relationships they can that help communication, collaboration and cooperation. The learner's ability to construct internal knowledge depends on his or her skills to locate the needed knowledge, select, evaluate, and apply it, which happens in the interactions not only with the information and computers, but also with people. Siemens (2003) notes,

“We derive our competence from forming connections” (p. 3). To facilitate effective and continuous learning instructors have to maintain and nurture connections among all participants, thus creating a community of practice (Lave & Wenger, 1991), capable of sustaining the challenges of learning.

Learning online or onsite can be, in fact, not only best facilitated by strong instructor engagement but more importantly, is dependent upon the instructor who guides the learner through a variety of cognitive and social activities. Vygotsky’s findings on social learning (1962) and Lave and Wenger’s situated learning approach (1991) suggest that the learning environment, whether physical or virtual, needs to include a social component. Socialization in the online environment is accomplished through communication tools such as asynchronous email and threaded discussions, and synchronous live web-based sessions, social networking and other activities. Nevertheless, as research and practice demonstrate, these tools are insufficient to achieve the optimum level of social activities to promote learning. Initiating and maintaining this important activity depends heavily on the instructor’s professional competency and personality.

Interactive online learning

With the advent of Web 2.0 and other collaborative online tools, an increased focus on collaboration, socialization, and group work in online university programs is noticeable; yet, students still report social isolation in online classes and, at the same time, exhibit a growing inclination to conduct their work independently without input from their peers or involvement in group work (Serdyukov & Hill, 2013). Yalof (2013) in her grounded research study of online learners examined the main impediments to studying online and reported that students feel a sense of isolation and lack of access to support systems due to navigating through the complex requirements of their online programs. Bolliger and Erichsen (2011), in particular, report that international students experience high levels of isolation both academically and socially. Perceptions of online learning from the student perspective continue to demonstrate the experience as an isolated and predominantly independent form of learning. The growth of class community and intensification of student engagement are, nevertheless, closely related to one another. Students who feel a sense of connectedness and psychological closeness, rather than isolation, are better prepared to become more actively involved with online learning, which results in higher order thinking and more productive knowledge building (Baker, 2010; Engstrom, Santo, & Yost, 2008).

Despite the feeling of isolation in an online environment, however, students in university classes often try to refrain from collaboration and prefer to work independently rather than in groups. Serdyukov and Hill

(2013) queried university students in a postgraduate program on learning preferences regarding independent learning and collaborative activities. When offered a choice between taking university courses and studying autonomously, 64.9% of students selected university courses, while only 24.3% indicated they could choose independent study and the rest showed no preference (p. 61). Thus, working adult students are not generally enthusiastic about learning autonomously, and yet, when asked if they prefer to learn independently or to collaborate with their peers in a university class, 70.3% of students stated they preferred to study independently, while only 18.9 % liked to collaborate with their peers. These data are indicative of students' attitude towards collaboration in online learning. Another study conducted by Poellhuber, Anderson, & Roy (2011) reported a higher percentage of students - 38.4% of respondents as "interested or very interested in collaborating with peers in their distance courses" (p.110), which still leaves the majority of students outside the community. The continued desire to work independently in online classes has generated a serious problem of student engagement with both instructors and peers in present-day online classes, thus affecting the quality of the learning outcomes, which needs to be addressed by the educators.

Learning, as noted above, is a social process involving continuous and varied interactions within the student group. Interactivity is essential for deep, meaningful learning. Early research in technology-based education (Moore, 1989) has identified three kinds of interactivity that support learning in online courses: interaction with content (learners access, analyze, manipulate, synthesize, and apply content information); interaction with instructors (learners communicate with and receive feedback from their instructors); and interaction with classmates (learners communicate with each other about content and create an active learning community).

According to Swan (2004), in the triad relationship between the learner, the course content, his or her peers in the college group, and with the instructor, the student's interaction with the content remains strong, while interaction with the two major live participants, the peers and the instructor, has been diminishing. Stroll, as cited by Hargreaves (2003) explains that "computers made us lose the ability to enter into spontaneous interaction with real people" (p. 25). As found in the previously cited study (Serdyukov & Hill, 2013), when working in groups, students have little confidence in their potential partners and are upset about losing their chance to earn a top grade if they team up with less proficient peers (p. 61). Hargreaves (2003) pointed to this phenomenon expressing concern over "school systems driven by performance results at the expense of relationships" (p. 26). Why does it happen? Perhaps because authentic human relationships are more complicated, unpredictable, demanding, time consuming and rely on trust in

one's partners? In an attempt to avoid human interactions, virtual or in person, students prefer to engage primarily with the content, which is not only necessary, but also safe and straightforward, and via electronic devices, which provide a protective, though transparent, barrier.

In addition to social learning and collaboration, success in education depends, to a large extent, on relationships, and empathy building. Student accomplishments are greatly affected by the level of their engagement in communication and collaboration with their peers and instructors. Beer, Clark, & Jones (2010) note that “engagement is the amalgamation of a number of distinct elements including active learning, collaborative learning, participation, communication among teachers and students and students feeling legitimated and supported” (p.76). Research shows that students who collaborate and even ask for help tend to obtain greater success in the online learning environment (Artino, 2008). Research by Serdyukov & Serdyukova (2009) demonstrates correlation between student outcomes and the volume and frequency of their participation in course communication (via threaded discussions), as well as instructor's involvement: the more the instructor is involved in the class interactions, the more students engage with the class, and the better the student outcomes. Liu, Magjuka, Bonk, & Lee (2007) also found that instructors who facilitate a sense of community and student engagement significantly affect student satisfaction and quality of online learning.

The need for interaction is certainly obvious to online course developers and, especially, the instructors. In addition to continuous engagement with the learning materials, assignments, course support materials, and external web-based resources, students in online courses traditionally participate in threaded discussions and chats, and also use email communication, which provides text-based interaction among students and with the instructor. This kind of text-only communication is insufficient to ensure effective, multimodal interaction in the class. Thus, a new trend has evolved to add more online synchronous communication through tools such as Collaborate or ClassLivePro (Blackboard), Adobe Connect, and other web-conferencing software. These tools allow for real-time Voice over Internet Protocol (VoIP) interaction to support live meetings and create a sense of immediacy in online classes. Incorporating advanced communication tools has been a recent innovation, which will be discussed further on. Many institutions are moving toward a blended model where the online class includes one or more face-to-face classroom sessions. For the online students, however, it imposes limitations on their flexibility and convenience of learning due to the requirement to attend synchronous meetings at an appointed time. Therefore, it does not have a great appeal for

working adult learners who favor asynchronous communication, which better allows them to adapt learning to their busy lifestyles.

Technological innovations leading to cloud-based collaborative learning, such as blogs, wikis, social media, and various Web 2.0 tools do offer communication and collaboration opportunities in the online environment. Davis, Deil-Amen, Rios-Aguilar, & Conche explain that “the term ‘social media technology’ (SMT) refers to web-based and mobile applications that allow individuals and organizations to create, engage, and share new user-generated or existing content in digital environments in multiple ways”(p.1). Research indicates a growth in student socialization on and outside the campus and the creation of virtual communities and spaces in the online environment for students to congregate (Sendall, 2008; Poellhuber, Anderson, & Roy, 2011). Still, computer-mediated interactions do not amount to “real”, personal, closer communication, and therefore continue to impair student learning. Charles Handy, cited in Hargreaves (2003), observes that, “fun they may be, these virtual communities create an illusion of intimacy and a pretense of community’ – but do they offer a substitute for real conversation?” (p. 25). While agreeing with Handy, we believe that to ensure students’ effective learning outcomes educators have to develop working online learning communities and increase students’ socialization and collaboration. Social networking, for one, which is rapidly embracing university students in academic settings, involves not only communication, but also collaboration, cooperation, and teamwork.

Relationships and collaboration in an online class

For active interactions in the student group to develop, the emergence of close relationships among them remains an essential condition. It is critically important that the instructors develop some kind of a relationship (rapport) with their online class, and establish personal contact with individual students. We also posit that students need to engage in continuous civil, intellectual, scholarly and professional discourse with their peers and with their instructors. In a study by Upkopodu (2008) online students identified commonly shared attributes of the academic course that increased their overall engagement and relationships in the online class: students positively reacted to using threaded discussions, partner-shared learning activities, favorably commented on course structure containing the 3Rs (rigor, relevance and relationships), and enthusiastically engaged in a variety of writing activities that allowed for interaction, e.g., making pre-post narrative inquiries and writing or reading response papers.

Research (Serdyukov & Sistik-Chandler, 2015) demonstrates that instructors generally appreciate the importance of relationships in a class. It is remarkable that 85% of queried respondents (university professors)

believe that relationships in the class affect the outcome of student learning. 67% percent agree online learning can promote relationships in the class, while 31% disagree, which suggests a problem with some instructors' pedagogy and teaching style. The overwhelming majority of the instructors in this study believe, on the one hand, in the power of personal relationships in an online class and consider that they should develop them; many, on the other hand, are still unsure whether online learning promotes relationships and creates an environment that blends the intellectual development and formalized learning with social learning. Even fewer know how to establish and maintain relationships.

The same publication indicates that instructors generally believe collaboration has good potential in online classes: 69% of respondents state online learning can include group work, whereas 28% regard it as mostly an independent activity. The main factors identified by the surveyed instructors as necessary for effective student collaboration in an online class are as follows:

1. Instructor's personal one-on-one contact with students via electronic tools (email, Skype, telephone, ClassLivePro, social media, etc.), and students' personal relationships with peers and the instructor.
2. Instructor's individual teaching style, methodology, role modeling, and persistence to make students work in teams and collaborate.
3. Students' disposition and desire to learn from others, to help and share, and experience empathy in interactions.
4. Students' confidence in the partners and trust established between team members.

From experience we know that confidence and trust develops in close, face-to-face teamwork. Although we cannot require students to share and care about others, the online environment needs to create experiences that simulate trust, empathy, cooperation, sharing, and caring. However, we should expect instructors to engage in more communication with the students, model effective interaction, develop relationships with students, and make working in teams for the expressed purpose of collaboration a standard practice.

A failure of social relationships and a corresponding loss of the sense of community that is usually present on a traditional campus are noted as one of the potential negative effects of online courses (Hiltz, 1998). Relationships develop when people have a common physical place to meet, a mutual reason to be together, shared goals to engage in some activity, a strong motivation and favorable conditions for joint activities. People need opportunities to get together, to rub shoulders, to experience commonality, and to learn to trust each other when combining their efforts and resources to enjoy the benefits of collective work. Do online classes offer such

opportunities? Not often, unfortunately, because in organized university classes someone needs to initiate, arrange and facilitate communication and collaboration in the class and construct conditions for the relationships to develop. It is clear that the main role in this task definitely belongs to the university and instructors.

Universities provide online classes through LMS, interactive tools, learning materials, communication channels, instructors, support, and resources. Instructors, in turn, facilitate, organize and maintain communication and collaboration in the class providing guidance, ongoing support, feedback and individual consultations.

While physical conditions are necessary for establishing and supporting communication and collaboration, still more depends on the enthusiasm, dispositions and professional qualifications of online instructors who make the learning possible. The role of the instructor is paramount for increasing effectiveness of online education (Barana, Correia, & Thompson, 2011; Hill & Serdyukov, 2010).

In online classes there are in-class and out-of-class communications, both of which can be done in various ways - via email, telephone and networking.

Format/ Temporal organization	Text-based	Voice/video-based
Asynchronous	Threaded discussion, email	Voice/video recording
Synchronous	Texting	Live sessions, telephone

Table 1. Interactions in online environment

As shown in Table 1, interaction in online classes can be either text-based or voice/video-based; the former is commonly done via threaded discussions and texting, and the latter via live sessions (videoconferencing) and telephone, or session recordings played back to reuse. Threaded discussions, emails and recordings are asynchronous, and networking via texting, as well as all live interactive sessions and telephone conversations, are synchronous. These types of communication are used in online classes with varying degrees of effectiveness.

All online interactions can serve two major functions: cognitive and social. Both cognitive and social interactions contribute to knowledge construction which has the most pronounced effect in threaded discussions. Actually, these discussions serve as one of the most effective mechanisms of knowledge construction, where students post information, share their knowledge, comment on other students' and instructor's posts, express their opinions, add new information, and argue (Knowlton, 2001; Hmelo-Silver, 2003), which contributes to deeper learning. Moreover, they are convenient due to their asynchronous character.

While cognitive interaction is necessary for building knowledge and solving problems stemming from the course content, social interaction is also crucial for supporting learning via its capacity to enhance the development of student behaviors, attitudes and relationships. Three of the more pronounced benefits of social interaction for learners included improved learning strategies, greater perseverance, and reduced need for help from the instructor (Lou, Abrami, & d'Apollonia, 2001), thus augmenting their self-efficacy. These outcomes are especially important in online education because of the inherent difficulties with learning without the structure and motivational elements of an in-person classroom setting (Moore, 2001). Social interaction, therefore, provides critical support for online learners who are separated from the school, instructor and peers.

As online learning is, as mentioned above, an independent learning, learning by reading the textbook and/or online materials, writing essays, solving problems, and posting answers to the course questions or discussion prompts cannot ensure quality of the learning outcomes. Interaction with the content, while static, is neither easy, nor sufficient, especially when students come to college with an inadequate knowledge base. Some students need guidance, support, and mentoring from their instructor.

Communication in the online class

Effective learning requires that the student interact with peers and the instructor. Yet, this is the weakest spot in online learning. As Eric Clark wrote, communication is the Achilles Heel of online learning (Clark, 2013). Why? First, it is difficult to communicate effectively via technology with the people you do not know. Second, communication takes precious time, and when students are busy and do not appreciate the value of communication in learning, they prefer to avoid it. Threaded discussions are a text document with clear requirements, therefore students are obliged to participate in them. Yet to engage students in a genuine communication is extremely difficult. For instance, in live sessions, even when they are graded, attendance in our classes commonly reaches only about 50% of the roster despite all of the instructor's efforts; the rest of the students have valid reasons to stay away and instead, if there is an alternate option, prefer to submit a written assignment. When live sessions are optional, attendance does not usually exceed 30 % of the class. The reason for poor attendance is evidently the synchronicity of such sessions which makes it inconvenient for working adults.

What part of the online course does communication occupy? We conducted a survey in an attempt to determine the time students spend on various activities in an online class. As we discovered (Serdyukov & Serdyukova 2009), communication in an online class consumes only a small

portion of students' time: per course students spend in threaded discussion 6.85 hours, in direct communications with peers (outside the discussions, via emails) 3.64 hours, with the instructor 1.55 hour, total 12.04 hours out of 62.95 hours invested in the class, or 19.05%. The rest involves doing assignments, writing a final paper, reading, testing, and some technical issues with the course – all mostly independent work. Thus, the active, communicative part of the learning takes less than 1/5 of the class time. Synchronous live sessions using videoconferencing, such as ClassLivePro, take, when integrated in the course, about 4 hours per course or less, which comprises up to 6.35% of the class time which adds to the overall communication time but still remains low – only 25% of the class time. It is definitely problematic to develop collaboration in the class if students are reluctant to communicate with each other.

Educators face various challenges in organizing student communication and collaboration in the online class:

- How to engage students in communication and collaboration?
- Will the course structure, integrated communication tools and assignments induce them to communicate and collaborate? Or it depends solely on the instructor?
- Which is the primary driver of communication and collaboration in the class: the cognitive or social networking?
- Is it possible to develop close relationships in an online class?

There are many other questions awaiting answers.

Collaboration as teamwork through networking is needed either to build knowledge more effectively, or solve complex learning problems, or develop projects of scale. There are three levels of collaboration via networking in an online class:

- Pair-share – individual questions, private conversations (among students)
- Team (small group) discussion, problem solving, project development, brainstorming (among students, and when necessary, with the instructor)
- Whole class – general discussion (both the class and the instructor)

There are also quite active individual in-class communications between the instructor and students on class matters. In addition, there is student networking outside the class, whether one-on-one with the peers or in a group.

Collaboration commonly develops in a small team where the work is shared between 3-5 students. The team has a task or a project with a focus on a common goal. Each team member has a role, personal objective, task, and information, all of which contribute to the achievement of a common goal.

The purpose of team activity is to achieve the preset goal by combining members' efforts via communication and collaboration.

Online learning puts an additional responsibility on the instructor to foster a communication-rich, collaborative learning environment. An understanding of social dynamics, including instructor immediacy and classroom community, can assist online instructors as they seek to develop the communal scaffolding necessary to support an effective learning environment (Baker, Woods, 2005).

Suggestions for best practices (Serdyukov & Sistik-Chandler, 2015) that encourage communication, collaboration, cooperation, and professional discourse invite the instructor to:

- design, and prepare course, syllabi, course outline, and calendar with the understanding that an online class is different from the face-to-face environment;
- plan for collaboration, synchronous communication, asynchronous threaded discussions and videoconferences, as well as for opportunities for informal communication;
- set the tone and produce a good first impression from the start; create and model a warm and welcoming learning environment that also establishes empathetic and humanistic relationships; institute a positive and mutually respectable collaborative online community overall will help to establish trust in a “cyberworld”;
- communicate policies and online norms including netiquette and other online ethics; set clear expectations that students will be expected to behave in a professional manner and that collaboration and meaningful exchanges with the instructor and with peers are desirable and required;
- hold virtual office hours when students can talk to you directly.

Key strategies that encourage and engage students in collaboration in the online class are as follows:

- Demand and require group work as part of the process.
- Ask students to self-select and form groups by meeting with other students in chat, private threaded discussion rooms or in a virtual office.
- Create a collaborative climate through Q&A and informal discussion boards (e.g., introductions) where students can get to know each other, and learn of their likes interests and problems.
- Use Socratic methods that help to engage students with the learning.
- Arrange groups by time zone and see that the groups reflect gender balance.
- Establish policies for differentiated grading that include group and independent grades for the same project.

- Encourage peer responses and have peers provide feedback in collaborative activities.
- Divide discussion boards, threaded discussions, and chats into small groups making interactions more personal.
- Monitor breakout sessions during synchronous discussions to help collaboration by facilitation.
- Engage students in paired work rather than in large group structures.

Conclusion

Active communication and collaboration among students and between students and their instructors are not only desirable but necessary for successful learning: fostering a highly interactive and collaborative online environment and relationships in the class that can enhance the learning outcomes. The majority of online university instructors believe in the power of personal relationships and agree that they should develop them in online classes. Many, however, are still doubtful that online learning promotes relationships and creates an environment that blends the intellectual and formalized learning with the social learning. This indicates that the loss of the ability to be social in an online environment may be manifested in student estrangement, which can be remediated through the use of social and collaborative tools. Students, in turn, often underestimate the benefits of communication and collaboration in the online class. Therefore it is critical for successful learning that the online instructor organize and facilitate teamwork and use a number of tools and strategies to accomplish this dynamic. At the same time, a significant number of educators who do not maintain collaboration and are not supporting the development of relationships for increasing student interactions in online classes. This necessitates further research in this area, dissemination of best practices, effective professional development and continuous institutional control.

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